

Digital Signal Processing (DSP)

Scholar Team (ST)

Develop, from the ground up, a useful DSP system, including both hardware and software components.

- In meeting this goal, DSP ST participants gain:
 - 1) improved DSP competence - especially from a hardware perspective
 - 2) increased awareness of DSP-related applications/research
 - 3) industry-marketable design and tool skills
 - 4) fun!

🎵 In past years, the DSP ST developed a DSP-based system for audio applications, including a digital stereo equalizer. This DSP system formed the foundation for several subsequent senior design projects including, among others, a probabilistic music generator 🎵

<http://saturn.ece.ndsu.nodak.edu/ecewiki/index.php/Group_258>

Currently, the team's focus is on the construction of a DSP-controlled desk-top inverted pendulum. To achieve this goal, the DSP ST is divided into four subgroups:

- 1) PCB layout
- 2) sensors
- 3) coding and algorithms
- 4) support circuitry.

Each group meets weekly to develop their respective subsystem. Weekly team meetings facilitate communication between subgroups and ensure overall project management objectives are met. It is anticipated that an initial prototype of the DSP-controlled desk-top inverted pendulum will be completed by the end of Fall 2007.

Interested? A "kick-off" meeting is tentatively scheduled for Thursday, September 13, 12:30-1:30 -- basically an organizational meeting to set up a real meeting time. Interested students should come to ECE 239 at that time, if possible. If they you can't attend the meeting but are interested in DSP ST or need more information e-mail Dr. Roger Green (Roger.Green@ndsu.edu), ideally sent by Tuesday, September 11.